

Building Knowledge for a Changing Climate: BKCC Project Progress Report

BKCC project name: CRANIUM (Climate change Risk Assessment New Impact and Uncertainty Methods).

Progress report no: 3

Prepared by: Jim Hall (University of Newcastle)

Date: 20 October 2004

General

- A statistical method for generating spatially correlated and time varying annual rainfall maxima has been developed. This will be used for studying the changing probability of extreme rainfall under changing climates, particularly for estimating risk of dam break and reservoir safety.
- The use of statistical sensitivity analysis for analysing the sources of uncertainty in risk analysis has been tested and demonstrated on a slope stability model. New statistical methods for emulation of computer codes have also been tested. A case study with Network Rail is under development.
- Work is underway to investigate the many approaches to decision-making in the presence of major uncertainty about the impacts that climate change might have on the outcomes of the alternative courses of action. These approaches vary in many respects: their underlying assumptions, input requirements, time and effort needed to carry them out and in the amount and type of information they provide about the choices to be made. A document which summarises the main strands and identifies the situations to which each might be best suited is currently being prepared.
- All three tasks of the CRANIUM project are now engaging with stakeholders through case studies and applications. A detailed study of ongoing or past decisions, where climate change was a relevant factor, should shed light on the practical difficulties faced by the stakeholders and the appropriateness of the different types of decision-making approach to their situation, with all its real-life complexities and constraints.
- The Bristol group in the CRANIUM project has moved to the School of Civil Engineering and Geosciences in the University of Newcastle, where Jim Hall, the CRANIUM project manager, has been appointed to the Chair in Earth Systems Engineering. The EPSRC grant has been transferred to Newcastle, so in future the CRANIUM consortium will be comprised to Newcastle, UEA and Leeds. Jim Hall's new email address is Jim.Hall@ncl.ac.uk